

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic Resources  
Honolulu, Hawaii 96813

June 10, 2010

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Research Permit to Christopher Winn, Hawaii Pacific University, Oceanic Institute, for Access to State Waters to Conduct Water Analysis Research Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument research permit to Christopher Winn, associate professor of oceanography, Hawaii Pacific University, pursuant to § 187A-6, Hawaii Revised Statutes (HRS), chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The research permit, as described below, would allow entry and research activities to occur in Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island
- Necker Island (Mokumanamana)
- French Frigate Shoals
- Gardner Pinnacles
- Maro Reef
- Laysan Island
- Lisianski Island, Neva Shoal
- Pearl and Hermes Atoll
- Kure Atoll State Seabird Sanctuary

The activities covered under this permit would occur between July 1, 2010 and August 31, 2010.

The proposed activities are a renewal of work previously permitted and conducted in the Monument.

INTENDED ACTIVITIES

The applicant proposes to collect water samples from various depths and locations within the Monument to analyze and characterize the carbonate chemical make-up of the water surrounding the atoll systems in Papahānaumokuākea.

To conduct this activity, Conductivity, Temperature, and Depth (CTD) casts would be performed, using the shipboard rosette on the NOAA Ship Hi'ialakai. In addition to the data collected by the CTD, the rosette would carry Niskin bottles for water sampling. Water samples would be brought onboard, preserved, and returned to Honolulu for analysis. Samples would be used to determine water column carbon chemistry. The applicant anticipates collecting 600 300ml samples, for a total of 180 liters of water collected.

The proposed work would more clearly define the potential impact of changes in ocean pH (ocean acidification) on the Monument ecosystem.

The activities proposed by the applicant directly support the Monument Management Plan's priority management needs 3.1 – Understanding and Interpreting the NWHI (through action plan 3.1.1 – Marine Conservation Science)

The activities described above may require the following regulated activities to occur in State waters:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource

#### REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since March 15th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

#### **Comments received from the scientific community are summarized as follows:**

Scientific reviews support the acceptance of this application. No concerns were raised.

#### **Comments received from the Native Hawaiian community are summarized as follows:**

Cultural reviews support the acceptance of this application. No concerns were raised.

#### **Comments received from the public are summarized as follows:**

No comments were received from the public on this application.

#### **Additional reviews and permit history:**

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA) Yes ☒ No ☐

If so, please list or explain:

- The proposed activities are in compliance with the National Environmental Policy Act.
- The Department has made an exemption determination for this permit in accordance with chapter 343, HRS and Chapter 11-200 HAR. See Attachment ("DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO CHRISTOPHER WINN, HAWAII PACIFIC UNIVERSITY, OCEANIC INSTITUTE, FOR ACCESS TO STATE WATERS TO CONDUCT WATER ANALYSIS RESEARCH ACTIVITIES UNDER PERMIT PMNM-2010-039").

Has Applicant been granted a permit from the State in the past? Yes ☒ No ☐

If so, please summarize past permits:

- The applicant was granted permit PMNM-2009-045 to conduct similar work in 2009.

Have there been any a) violations: Yes ☐ No ☒  
b) Late/incomplete post-activity reports: Yes ☐ No ☒

Are there any other relevant concerns from previous permits? Yes ☐ No ☒

#### STAFF OPINION:

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with certain special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Research Permit General Conditions. All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

#### MONUMENT MANAGEMENT BOARD OPINION:

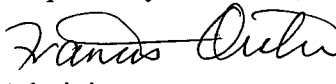
The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

#### RECOMMENDATION:


That the Board authorize and approve a Research Permit to Christopher Winn, Hawaii Pacific University, Oceanic Institute, with the following special conditions:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge
6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

Respectfully submitted,

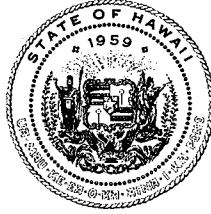
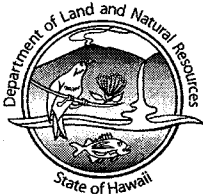
  
for Administrator

APPROVED FOR SUBMITTAL

  
LAURA H. THIELEN  
Chairperson

Attachment

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET, ROOM 330  
HONOLULU, HAWAII 96813

June 10, 2010

LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT


KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

RUSSELL TSUJI  
DEPUTY DIRECTOR - LAND

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

TO: Division of Aquatic Resources File

THROUGH: Laura H. Thielen, Chairperson

FROM: Francis Oishi   
Division of Aquatic Resources

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT  
UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR  
PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO CHRISTOPHER  
WINN, HAWAII PACIFIC UNIVERSITY, OCEANIC INSTITUTE, FOR ACCESS TO STATE WATERS TO  
CONDUCT WATER ANALYSIS RESEARCH ACTIVITIES UNDER PERMIT PMNM-2010-039.

The following permitted activities are found to be exempted from preparation of an  
environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:

Papahānaumokuākea Marine National Monument Research Permit to Christopher Winn, Hawaii  
Pacific University, Oceanic Institute, for Access to State Waters to Conduct Water Analysis  
Research Activities

Permit Number: PMNM-2010-039

Project Description:

The research activities, as described below, would allow entry and activities to occur in  
Papahānaumokuākea Marine National Monument (Monument), including the NWHI State  
waters between July 1, 2010 and August 31, 2010.

This is an effort to collect water samples from various depths and locations within the Monument  
to analyze and characterize the carbonate chemical make-up of the water surrounding the atoll  
systems in Papahānaumokuākea.

The proposed activities are in direct support of the Monument Management Plan's priority  
management needs 3.1 – Understanding and Interpreting the NWHI, through action plan 3.1.1 –  
Marine Conservation Science. This action plan includes a strategy to research, characterize and  
monitor marine ecosystems.

Activities to support understanding and interpreting the NWHI are addressed in the Monument  
Management Plan Environmental Assessment (December 2008) which resulted in a FONSI. This

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EA summarizes that monitoring programs would provide essential information to track long-term ecological integrity of the Monument (PMNM MMP Vol. 2, p.29). Activities to track and better understand how ocean acidification will affect the Monument ecosystem, such as those proposed, would contribute to these programs.

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since March 15th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Exemption Determination:

After reviewing HAR § 11-200-8, including the criteria used to determine significance under HAR § 11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including collection of water samples, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR § 11-200-7. This permit does not involve an activity that is precedent to a later planned activity.

2. The Exemption Class for Scientific Research with no Serious or Major Environmental Disturbance Appears to Apply. Chapter 343, HRS, and § 11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource." This exemption class has been interpreted to include collection for "water quality analysis", such as those being proposed.

The proposed collection activities here appear to fall squarely under the exemption class #5, exempt item #1 as described under the Division of Plant Industry, Department of Agriculture exemption list approved on September 17, 2008. As discussed below, no significant disturbance to any environmental resource is anticipated in the sampling of Monument resources. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if "the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a

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particularly sensitive environment.” HAR § 11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR § 11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR § 11-200-12.

This project would be a continuation of work previously conducted by the applicant. Specifically, further monitoring of ocean chemistry of Monument waters would be conducted. Other projects may include the collection of water samples, but no other studies are looking specifically at carbon chemistry and the potential impact of changes in ocean pH on the Monument ecosystem. Other permits that have involved collection of water samples have had no deleterious effects on Monument resources. Significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities would be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts, nor did it raise any cultural concerns, that would occur as a result of these activities.

The activities would be conducted from the NOAA Ship HI'IALAKAI during its July/August cruise. It is anticipated that the vessel will visit Nihoa, French Frigate Shoals, Pearl and Hermes, Midway, and Kure on this expedition. The following table shows all permitted activities that may occur concurrently.

**Table 1. Concurrent Projects Aboard NOAA SHIP HI'IALAKAI**

<b>Permit</b>	<b>Purpose and Scope</b>	<b>Location</b>
PMNM-2010-007 NOAA Ship HI'IALAKAI	The permit allows NOAA Ship HI'IALAKAI entry into PMNM. Personnel aboard the vessel will be permitted under separate permits.	All locations
PMNM-2010-016 Gleason	The permit allows maritime heritage surveys and artifact recovery.	All locations
PMNM-2010-023 Rossiter (proposed)	The proposed action is to allow collection of live coral and fish.	All locations
PMNM-2010-024 Gates (proposed)	The proposed action is to allow coral collections.	FFS, PH
PMNM-2010-025 Karl (proposed)	The proposed action is to allow coral collections and recovery of data loggers.	FFS, PH
PMNM-2010-031 Kosaki (proposed)	The proposed action is to allow survey of deep coral reefs; collection of voucher fish, coral, and algae; removal of target invasive species.	All locations
PMNM-2010-037 Toonen	The permit allows collection of common reef invertebrates.	All locations (specific locations per species)
PMNM-2010-038 Bowen	The permit allows collection of reef fishes.	All locations
PMNM-2010-039 Winn (proposed)	The proposed action is to allow water sampling.	All locations

Eight other permits would potentially be active in the Monument concurrently with the proposed activities. Most of those would be dealing with different organisms or habitat types and would not overlap. Only one other permit (PMNM-2010-031) would be collecting water samples, and the samples would be used for measuring different oceanographic characteristics. The culmination of these permits, and their disparate activities, occurring throughout the Monument over a 5-week period, is not anticipated to have significant cumulative impacts.

Since no significant cumulative impacts or significant impacts with respect to any particularly sensitive aspect of the project area are anticipated, the categorical exemptions identified above should remain applicable.



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4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all research activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

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Laura H. Thielen  
Board of Land and Natural Resources

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Date

**Papahānaumokuākea Marine National Monument**  
RESEARCH Permit Application

**NOTE: *This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).***

**ADDITIONAL IMPORTANT INFORMATION:**

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

**INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED**

Send Permit Applications to:

Papahānaumokuākea Marine National Monument Permit Coordinator

6600 Kalaniana'ole Hwy. # 300

Honolulu, HI 96825

nwhipermit@noaa.gov

PHONE: (808) 397-2660 FAX: (808) 397-2662

**SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.**

## **Papahānaumokuākea Marine National Monument Permit Application Cover Sheet**

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

### **Summary Information**

**Applicant Name:** Dr. Christopher Winn and Dr. Samuel E. Kahng  
**Affiliation:** Hawaii Pacific University

**Permit Category:** Research

**Proposed Activity Dates:** July 21, 2010 through August 19, 2010

**Proposed Method of Entry (Vessel/Plane):** vessel

**Proposed Locations:** The waters surrounding several islands within the Monument including Nihoa, French Frigate, Pearl and Hermes, Midway and Kure Atoll

**Estimated number of individuals (including Applicant) to be covered under this permit:**

2

**Estimated number of days in the Monument:** 30

**Description of proposed activities:** (complete these sentences):

a.) The proposed activity would...

Collect approximately 300 ml water samples from the research vessel from the surface to depths of 1000 meters. These samples will be returned to Honolulu for the determination water column carbon chemistry.

b.) To accomplish this activity we would ....

Better understand the influence of the coral benches within the monument on the surrounding ocean chemistry with the ultimate objective of better understanding how ocean acidification will affect the monument ecosystem.

c.) This activity would help the Monument by ...

More clearly defining the potential impact of changes in ocean pH on the monument ecosystem

**Other information or background:**

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Christopher D. Winn and Samuel E. Kahng

Title: Associate Professor of Oceanography

**1a. Intended field Principal Investigator (See instructions for more information):**  
Christopher D. Winn

### **2. Mailing address (street/P.O. box, city, state, country, zip):**

[REDACTED]

Phone: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

For students, major professor's name, telephone and email address:

### **3. Affiliation (institution/agency/organization directly related to the proposed project):**

[REDACTED]

### **4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):**

Mr. Robert Thompson  
Mr. Coulson Lantz



## **Section B: Project Information**

### **5a. Project location(s):**

<input checked="" type="checkbox"/> Nihoa Island	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Necker Island (Mokumanamana)	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> French Frigate Shoals	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Gardner Pinnacles	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Maro Reef			
<input checked="" type="checkbox"/> Laysan Island	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Lisianski Island, Neva Shoal	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Pearl and Hermes Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Midway Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Kure Atoll	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input checked="" type="checkbox"/> Deep water
<input type="checkbox"/> Other			

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

### **Location Description:**

Our sampling will be restricted to the water column. We will not be collecting live animals or collecting other types of samples within the monument.

### **5b. Check all applicable regulated activities proposed to be conducted in the Monument:**

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- ☐ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☐ Anchoring a vessel
- ☐ Deserting a vessel aground, at anchor, or adrift
- ☐ Discharging or depositing any material or matter into the Monument
- ☐ Touching coral, living or dead
- ☐ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- ☐ Attracting any living Monument resource
- ☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- ☐ Subsistence fishing (State waters only)
- ☐ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

**6 Purpose/Need/Scope *State purpose of proposed activities:***

Our research is designed to evaluate the impact of the calcium carbonate banks on the carbon chemistry of the surrounding ocean and to assess the impact of ocean acidification on the carbonate structures within the monument.

**7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:**

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

Our collection small volumes of seawater from the water column surrounding the islands will not impact the emergent islands or submerged reefs in any way.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects? Water samples will be collected from the water column and will not affect biological or physical features within the Monument.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

Our samples must be collected from monument waters in order to improve our understanding of the chemical processes within the monument.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

One of the most fundamental processes within the monument is the precipitation of calcium carbonate by reef building organisms. Our research will improve our understanding of the precipitation and dissolution of calcium carbonate and help to anticipate the impact of ocean acidification on these processes within the monument.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

We will participate in month-long expeditions to the monument. Our visits will be part of ongoing observation and research by the Papahānaumokuākea Marine National Monument

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

We have great experience in this area of research, and have participated in research programs focusing on oceanic carbon chemistry for decades. Relevant experience includes participation as

principle investigator on the Department of Energy's Global Carbon Survey as part of the International World Ocean Circulation Experiment (WOCE) and the National Science Foundation's Joint Global Ocean Flux (JGOFS) program. These large scale research programs have included similar research on research cruises in virtually all of the world's oceans.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct. We are working closely with the Papahānaumokuākea Marine National Monument on this research effort and the monument is funding our participation

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

Our sample collection and analysis procedures have been developed over years of similar research and our expertise in the study of the oceanic carbon system will provide important insight into the impact of ocean acidification of the monument.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

Yes

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

We cannot foresee any conditions that would make issuance of this permit inappropriate

#### **8. Procedures/Methods:**

Water samples will be collected from the research vessel using standard hydrographic methods. Subsamples will be drawn from niskin bottles attached to a CTD rosette system and returned to Honolulu for analysis.

**NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a customized application will be needed. For more information, contact the Monument office on the first page of this application.**

#### **9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):**

Common name:  
sea water

Scientific name:



# & size of specimens:  
600 300 mL samples (180 liters)

Collection location:

☐ Whole Organism ☐ Partial Organism

**9b. What will be done with the specimens after the project has ended?**

**9c. Will the organisms be kept alive after collection?** ☐ Yes ☐ No

• General site/location for collections:

Water column above the substrate from the surface to 1000 meters and to roughly with 15 kilometers of any emergent reefs.

• Is it an open or closed system? ☐ Open ☐ Closed

I don't believe that our sampling fits into either definition. All of our water samples will be drawn from the water column, preserved and returned to Honolulu for analysis

• Is there an outfall? ☐ Yes ☒ No

• Will these organisms be housed with other organisms? If so, what are the other organisms?

• Will organisms be released?

**10. If applicable, how will the collected samples or specimens be transported out of the Monument?**

Samples will be returned to Honolulu with the research vessel

**11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:**

We anticipate exchanging a few water samples with other laboratories to ensure analytical accuracy and precision

**12a. List all specialized gear and materials to be used in this activity:**

We will utilize the ship's CTD, rosette, winch and hydrowire for sample collection

**12b. List all Hazardous Materials you propose to take to and use within the Monument:**

Small amounts of Mercuric Chloride. This chemical will be used for sample preservation only and will not be released into monument waters. We add this chemical to our water samples into

order to preserve them for analysis in shore-based laboratories. This chemical is also used sparingly. We will use less than 50 milliliters during the entire month-long expedition.

**13. Describe any fixed installations and instrumentation proposed to be set in the Monument:**

No fixed instruments will be deployed

**14. Provide a time line for sample analysis, data analysis, write-up and publication of information:**

Complete analysis and interpretation will require approximately one year following the completion of the cruise.

**15. List all Applicants' publications directly related to the proposed project:**

Please see attached C.V.

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

---

Signature

Date

**SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:**

Papahānaumokuākea Marine National Monument Permit Coordinator  
6600 Kalaniana'ole Hwy. # 300  
Honolulu, HI 96825  
FAX: (808) 397-2662

**DID YOU INCLUDE THESE?**

- ☒ Applicant CV/Resume/Biography
- ☒ Intended field Principal Investigator CV/Resume/Biography
- ☐ Electronic and Hard Copy of Application with Signature
- ☐ Statement of information you wish to be kept confidential
- ☐ Material Safety Data Sheets for Hazardous Materials

## **Papahānaumokuākea Marine National Monument Compliance Information Sheet**

**1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):** Mr. Robert Thompson (technician, graduate student); Mr. Coulson Lantz (technician, graduate student)

**2. Specific Site Location(s): (Attach copies of specific collection locations):** NWHI various locations at depths between 60 and 2000 meters (Dependent upon which island/atoll locations NOAA ship HI'IALAKAI will be going to during their July/August cruise)

**3. Other permits (list and attach documentation of all other related Federal or State permits):** none

**3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.** none

**4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information):** NOAA (Will provide copies of budget upon return from Mainland)

**5. Time frame:**

Activity start: July 2010

Activity completion: June 2011

Dates actively inside the Monument:

From: July 21, 2010

To: August 19, 2010

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: Our specific sampling locations will be established to coincide with

other sampling work done in the Monument. We will be sampling at night when other operations are cannot be conducted.

Personnel schedule in the Monument: Robert and Coulson will be in the Monument during the July/August 2010 HI'IALAKAI cruise

**6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:** Proof of travel insurance for Robert Thompson and Coulson Lantz will be provided upon return from Mainland.

**7. Check the appropriate box to indicate how personnel will enter the Monument:**

- ☒ Vessel  
☐ Aircraft

Provide Vessel and Aircraft information: NOAA Ship HI'IALAKAI

**8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):**

- ☐ Rodent free, Date: n/a  
☐ Tender vessel, Date: n/a  
☐ Ballast water, Date: n/a  
☐ Gear/equipment, Date: n/a  
☐ Hull inspection, Date: n/a

**9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):**

Vessel name:

Vessel owner:

Captain's name:

IMO#:

Vessel ID#:

Flag:

Vessel type:

Call sign:

Embarkation port:

Last port vessel will have been at prior to this embarkation:

Length:

Gross tonnage:

Total ballast water capacity volume (m3):

Total number of ballast water tanks on ship:

Total fuel capacity:

Total number of fuel tanks on ship:

Marine Sanitation Device:

Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:

Inmarsat ID#:

\* Individuals MUST ENSURE that a type-approved VMS unit is installed and that its automatic position reports are being properly received by the NOAA OLE system prior to the issuance of a permit. To make sure your VMS is properly configured for the NOAA OLE system, please contact NOAA OLE at (808) 203-2503 or (808) 203-2500.

\* PERMITS WILL NOT BE ISSUED TO INDIVIDUALS ENTERING THE MONUMENT VIA VESSEL UNTIL NOAA OLE HAS CONTACTED THE MONUMENT PERMIT COORDINATOR WITH A 'POSITIVE CHECK' READING.

#### **10. Tender information:**

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:

### **Additional Information for Land Based Operations**

**11. Proposed movement of personnel, gear, materials, and, if applicable, samples:**

n/a (activities will not occur on land)

**12. Room and board requirements on island:**

n/a

**13. Work space needs: n/a**

**DID YOU INCLUDE THESE?**

- ☐ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☐ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits